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5. Ecosystem.

As described in Chapter IV-A-5, no endangered species are found, and no known habitats exist, in the study area. No change in ecosystems or the status of endangered species would be anticipated under any of the alternatives, including the no action alternative.

6. Solid And Hazardous Waste.

Future Nonhazardous Waste Generation And Disposal. Chrysler is planning to introduce a 100 percent plastic returnable containers and dunnages policy for the new Jefferson Assembly Plant, similar to the Sterling Heights Assembly and Warren Truck Assembly programs. 1 It is estimated by Chrysler that 75 percent of the solid waste currently being generated will be eliminated because of the returnable container program. Chrysler anticipates that, considering the 100 percent returnables policy, nonhazardous waste generation will be approximately 90 cubic yards per day. wastes currently generated by residences and business within the project area will be distributed outside the project area as they are relocated. The net effect of nonhazardous waste generation from such land uses within the City on local and regional disposal facilities will be minimal.

As described in Chapter IV-A-6(a), large amounts of wood and metal scrap will be generated during demolition. There should be no capacity problem in disposing of this material at one or more of the following landfill sites in Wayne County: Sumpter Township (10 plus years capacity), Van Buren Township (10-15 years capacity), Riverview (15-20 years capacity). Disposal will not occur in wetlands.

It is not possible at this time to identify the volume available in these landfills. However, it is the opinion of the City of Detroit that the City's new Resource Recovery Facility, planned to be on-line by 1990, will obviate the need for the remaining capacity in metropolitan area landfills.

Notwithstanding the acceptability of inert demolition rubble for fill, rip-rap, dikes, etc., the City of Detroit has determined that the following disposal controls will be implemented:

- Disposal of nonhazardous wastes will be at Type II and Type III landfills exclusively;
- The construction manager will have separate contracts with demolition haulers which will prohibit illegal dumping and dumping in wetlands;
- Haulers will be required to be bonded; and
- Controls will be established whereby haulers must obtain a voucher or receipt of the landfill operator in order to get paid for each load.

b. <u>Future Hazardous Waste Generation And Disposal</u>. Chrysler has indicated that future classes of hazardous waste generation will be approximately equivalent to present classes. Although high production volumes of a larger sized vehicle are anticipated, generation may be less than, but will not exceed, present totals. Although modernized, the same processes and basic materials will be used for production in the new facility.

The City of Detroit Building and Safety Engineering Department will review detailed site plans, when available, for hazardous waste values. Chrysler will only be classified as a hazardous waste generator under applicable Act 64 and RCRA regulations. Among the measures that would be utilized at the proposed plant are:

- Hazardous waste minimization program;
- Requiring all prospective vendors to supply pertinent chemical data;
- Unloading all materials received as drum or bulk shipments inside the plant directly at point of usage or in an accumulation area;
- Controlled accumulation areas to reduce the potential of spillage or leakage;
- Locating all bulk systems having large capacities on concrete pads and having them diked for containment.

Disposal of hazardous wastes generated by the new production facility will be the same as the present system, subject to changes in state and federal laws and regulations. Hazardous wastes accumulation areas will be established in accordance with applicable RCRA and Act 64 regulations. No impact on the surrounding environment is anticipated because appropriate containment mesures will be taken. Such measures may include storage tanks. Only above-ground storage tanks will be used to ensure proper management of stored materials. New designations by state and federal agencies (e.g., the proposed new Toxicity Characteristic Leaching Procedure (TCLP) list) may result in modifications to present hazardous waste volume estimates.

c. The Need For A Hazardous Waste Management (HWMP) Plan. The Chrysler Jefferson Assembly Plant has a Spill Prevention Control And Countermeasure Plan (SPCC), Pollution Incident Prevention Plan (PIPP), and Hazardous Waste Management Plan, currently dated October, 1984.

Much of the site presently under consideration for demolition and redevelopment has been industrially developed for more than 80 years. Only one written record of a spill on Chrysler Corporation property exists (Appendix G). That spill occurred during 1984, on a paved area, and only approximately ten gallons of water-based primer entered a catch basin. Most of that was recovered. Chrysler was not fined by either

the State of Michigan or USEPA as a result of this one minor spill. Documentation of spills at other establishments has not been obtained, but if such documentation exists, it should be discovered as a result of implementation of the Hazardous Waste Management Plan. (Appendix H-2)

Preliminary site history investigation indicates that of 120 non-residential parcels in the project area, about 50 require further investigation to determine whether, as a result of current or prior uses, they have been subjected to contamination. In order to carry out these assessments, the Hazardous Waste Management Program contained in Appendix H-2 has been developed.

Site assessments within the project area, including the one Chrysler-owned 10 acre parcel which will be used for the Phase I construction of the Phosphate Uniprime Facility, will be performed on behalf of the City by consultants retained by the Construction Manager, Walbridge-Aldinger, in accordance with the Hazardous Waste Management Plan. Other Chrysler-owned properties within the project area, i.e., the existing assembly plants, will continue in operation until 1991 or later. Assessments on these other Chrysler properties, if necessary, will be performed by Chrysler at the time when the property is vacated and ready for demolition. Such assessments will be performed pursuant to then applicable regulations.

d. <u>Site Investigations</u>. A listing of industrial and commercial properties to be acquired by the City of Detroit is provided in Appendix H-1. From among 1,005 parcels of property to be acquired by the City of Detroit Community & Economic Development Department, it is estimated that the industrial and commercial parcels listed in Appendix H-1 will need site inspections and/or site assessments prior to demolition.

At present, it is not known whether any of the properties to be acquired by the City of Detroit have previously required any on-site emergency investigation or remedial action either due to off-site contamination or complaints by the Michigan DNR District Offices.

To access the MDNR District Office file reports, the names of the industrial parcels and the property descriptions of the parcels will need to be identified and presented to Michigan DNR field offices for screening. During this screening process, more properties may be added to the site investigation list.

The Site Investigation Plan is presented in detail in Appendix H-2 as part of the Hazardous Waste Management Plan. This plan describes the protocols and methods to be followed for historic screening, property assessment, physical investigations and sampling and analysis methods. In addition, procedures are described for determining remediation needs, action levels, and disposal alternatives.

The Site Investigation Plan is summarized as follows:

- 1. Perform historic records and environmental records search to identify uses and parcels which may require further investigation.
- 2. Visually inspect those buildings in the project area which are identified as likely to contain toxic or hazardous materials.
- 3. Verify contents of containers that may be used for accumulation or storage of hazardous or toxic materials, including notification, manifesting, transport and storage or disposal.
- 4. Sample and analyze obvious potential sources of hazardous or toxic substances within buildings; for example, hydraulic fluid lines; sumps; machines; trenches; or reservoirs which could spill, rupture, discharge, or otherwise allow toxic or hazardous materials to become exposed to precipitation and runoff during and after demolition.
- 5. Inspect, evaluate and sample as needed the ground surface and subsurface adjacent to buildings which appear to be a site for prior disposal of, for example, oils, solvents, paints, industrial process wastes, and other hazardous or toxic substances, and analyze samples.
- 6. Verify the existence, location, size and contents of on-site below grade storage tanks within the project area. When located, verify the contents by sampling and analysis.
- 7. Following demolition and removal of the debris, where needed, soil cores may be taken in those areas which will be excavated in those locations identified in (5.), above, in order to learn the extent and depth of contamination. Sample soil cores will be analyzed for hazardous or toxic substances.
- 8. Devise appropriate plans for such subsurface areas of contamination as are documented in (7.) so that stormwater runoff does not contact or remove such material. Appropriate solid waste accumulation and disposal plans also will be required for subsurface material located in (7.).
- 9. Sample and analyze stormwater at selected storm sewer manholes for differential evaluation.
- 10. Devise appropriate storage and/or disposal programs for storage tanks located in (6.) which contain hazardous or toxic materials so that demolition may proceed.
- 11. The remaining site is residential land cover. The residential area will be visually inspected. Little, if any, hazardous or toxic waste should be present in the residential area.

Within the last year, USEPA has promulgated small quantity regulations that may require the rapid screening and disposal of small amounts of wastes left in structures following relocation. It is to be

expected that about 10 percent or 20 percent of the overall hazardous waste generated in the United States results from small generators. Waste removed from the project area will be properly characterized in accordance with RCRA and Act 64 regulations.

Based upon a review of costs of the previous 1980 demolition of 450 acres in the Central Industrial Park of Hamtramck for the siting of the General Motors plant in the downtown Detroit area, any hazardous waste or mitigation cleanup requirements for this Jefferson Avenue Plant Revitalization project should be less than 3 percent to 5 percent of the overall demolition costs budgeted.

e. Pertinent Details Of The Hazardous Waste Management Plan. The industrial and commercial nature of much of the area to be demolished raises the issue of potential hazardous and/or toxic substances which may be exposed or released and become available for off-site transport via water or air release. "Toxic and hazardous" substances are those defined by the Toxic Substances Control Act (TSCA), the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), and such companion state statutes such as Act 64 and Act 641. The presence or absence of hazardous or toxic substances in the debris also is significant for how such material is accumulated prior to disposal, how it should be transported, and where it may be disposed of.

To prevent any adverse impact from the possible occurrence of hazardous and/or toxic substances, and to ensure compliance with applicable regulations, the City of Detroit will initiate the Hazardous Waste Management Plan (Appendix H-2) during demolition and site preparation through the City's Construction Manager, Walbridge-Aldinger, who will also be in charge of supervising cleanup during demolition. The Construction Manager will retain some contractors to perform site assessments and any remediation required.

If topsoils are found to be contaminated, the depth and extent of contamination will be investigated. The depth of contamination would depend upon the contaminant. Lead or other metals may only extend a foot or two below the surface, while liquids such as chlorinated solvents or acids could radically change the tightness of any clay base and extend down to bedrock or the groundwater system.

Groundwaters in these areas should require minimal testing because drinking water and sewer systems are extensively provided in this area of the City of Detroit, If investigations indicate a possibility of groundwater contamination, the level of contamination will be determined and checked against sewer waters and area groundwater and/or recharge.

In conjunction with the City of Detroit Hazardous Waste Task Force, the Construction Manager, hazardous waste site investigator and cleanup subcontractor, a mitigation and cleanup plan will be developed for each site where mitigation and cleanup is specified by the Michigan DNR District Office for voluntary compliance with applicable regulations.

f. <u>PCB And Asbestos Disposal</u>. These items require special consideration. Each is addressed under laws and regulations other than RCRA. PCBs are regulated under TSCA and the Michigan PCB Act. Asbestos removal is regulated under the Clean Air Act and federal Occupational Safety and Health Act (OSHA).

PCBs and PCB-contaminated materials will be removed and disposed of in accordance with applicable state and federal laws and regulations. In all cases, the requirements of EPA's PCB regulations at 40 CFR Part 761 will govern storage of PCB and PCB-contaminated materials prior to disposal off-site and actual off-site disposal, including any applicable recordkeeping requirements.

Asbestos removal will be conducted by qualified contractors as part of the demolition activities. The contractors will be required to comply with the applicable requirements of OSHA and Clean Air Act regulations governing asbestos. (See, 29 CFR 1910.101; 40 CFR Part 61, Subpart M.)

g. Impact Of The No Action Alternative. If the no action alternative is chosen, the Jefferson Assembly Plant will cease operations in the near future. Demolition might eventually occur, but at no specific date. The City of Detroit would continue to provide refuse collection for residential users in the area. Disposal from current land uses should not pose a problem because the City assigns equipment and manpower throughout the City on a demand basis that is constantly monitored. However, under the no action alternative, site assessments of the nature proposed to be undertaken in connection with the project would not be performed.

With proper implementation, the environmental consequences of the project from the hazardous materials aspect will be positive. Identified environmental hazards will be removed and areas of minor impact will be paved or otherwise contained.

6. Current Waste Generation - Solid And Hazardous Waste.

a. Current Nonhazardous Solid Waste Generation. Currently, the Jefferson Assembly Plant generates approximately 77,000 pounds of miscellaneous scrap metals, plastics, wood, paper, sweepings, and cafeteria and kitchen garbage per day. In addition, about 11,000 pounds of broken wood pallets are generated per day. A 42 cubic yard dumpster holds approximately 9,000 pounds or 40 net cubic yards. Jefferson Assembly disposes through a commercial disposal company an average of 390 cubic yards of solid waste per production day. All nonhazardous solid wastes are removed from the Jefferson Assembly Plant by private disposal companies for disposal at the Wayne Disposal landfill.

The estimated "standing" volume of all the Manufacturing and Administration Buildings is 57,000,000 cubic feet, excluding the basements. Assuming a ratio of 4:1 between the standing volume and collapsed (demolished) volume, the estimated volume of solid waste is 14,250,000 cubic feet, or 527,800 cubic yards. There may be an equal or greater amount of material from surrounding parcels, making a likely total volume in excess of one million cubic yards of solid waste. The largest portion of this would be rubble, cement, brick, asphalt and other inert materials from industrial plant sites in the area.

It should also be noted that machinery no longer needed is accumulated adjacent to the plant (Exhibit IV-13). Prior to disposal as a nonhazardous waste, this material must be inspected for PCBs, solvent, paint, etc., contamination.

Currently, residences and businesses within the project area generate approximately 12,000 pounds or 50 cubic yards of nonhazardous wastes per day. These wastes are collected and disposed of by the City of Detroit.

b. <u>Current Hazardous Waste Generation And Accumulation</u>. The existing Jefferson Assembly Plant generates 1,139,393 gallons of toxic and hazardous waste per year² (Exhibits IV-I4A and B). Depending upon the type of waste, the following companies remove and dispose of hazardous materials:

Chemical Waste Management - sealers, deadeners and adhesives;

Michigan Disposal - dip prime sludge;

Chem-Met Services - miscellaneous: and

Petro-Chem Processing - solvents.

All liquid hazardous wastes are managed off-site by appropriately licensed and/or permitted contractors.

The extent of hazardous waste generation from existing industrial and commercial establishments within the project area, other than the

Jefferson Assembly Plant, is not known. Hazardous waste removal and disposal methods for these firms are not known.

Chrysler is not required to have a hazardous waste permit for the Jefferson Assembly Plant under either RCRA or Act 64 because it operates only as a generator. As of November 12, 1985, the Jefferson Avenue Plant contained 47 storage tanks, three of which have been subsequently removed. None of these storage tanks were used for hazardous waste storage. Presently, there are 26 above ground tanks, of which 15 are active. There are currently 18 underground tanks, of which 9 are active. Many, if not most, of these tanks are in excess of 30 years old, and the underground tanks have not been cathodically protected, although they are steel. Appendix E provides individual tank identification, status, capacity and contents from the Chrysler Corporation Storage Tank Survey as of November 12, 1985. Thirty-eight of the tanks are located south of Jefferson Avenue. Four underground tanks were integrity tested during May 1986. Chrysler has retained a consultant to test the remainder of the underground tanks in late 1986 as part of an overall tank management program to test all its tanks.

Both underground and above ground tanks may be present in non-Chrysler establishments within the project area. At least three active gasoline service stations have been identified. However, the status of their underground tank management plans has not been determined.

All of the current hazardous waste generation activities at the Chrysler Jefferson Avenue Plant have been assigned an EPA identification number.

In addition, at least three miscellaneous discard areas have been identified within the project area, but not on Chrysler property. These sites appear to contain tires, batteries and abandoned cars. Although not hazardous waste sites, per se, they will be inspected within the Hazardous Waste Management Plan.

c. <u>Current PCB Condition</u>. Presently, the Jefferson Assembly Plant contains four PCB transformers and 15 PCB capacitors.

The PCB transformers are in operation at present, and have been identified and inventoried in accordance with TSCA and USEPA regulations. Inventory and inspection documents may be inspected by appropriate agency personnel at the plant. Exhibit IV-15 also identifies the approximate locations of the PCB transformers.

The existence of PCB transformers on other parcels within the project area cannot be confirmed at this time. However, at the time of appraisal or implementation of the Hazardous Waste Management Plan, a search and identification will be made.

d. <u>Current Asbestos Conditions</u>. Appendix F provides a detailed description of suspected asbestos containing materials (ACM) at the Jefferson Assembly Plant. It is estimated that approximately 103,500 cubic feet (3,830 cubic yards) of such material will require removal prior to demolition. Some additional ACM may be discovered in smaller businesses and in homes during appraisal.

EXHIBIT IV-14A. JEFFERSON ASSEMBLY RENEWAL PROGRAM TOXIC/HAZARDOUS WASTE INVENTORY

		Total Amount Of Waste Gallons
1.	EP toxic paint sludge from auto body paint operation	57,760
2.	Corrosive sludge from caustic strip tank-cleaning operations	14,355
3.	Ignitable paint sludge from auto body paint operations	414,275
4.	Wastewater treatment sludge from electroplating operations	147,733
5.	EP toxic dip primer sludge from body dip operations	17,500
6.	EP toxic waste sealer from body assembly operations	1,375
7.	Ignitable welding primter/water based paint from welding operation	7,535
8.	Ignitable sound deadener from auto assembly operations	2,860
9.	Ignitable water sealer/adhesive cement from auto trim assembly	476,000
	TOTAL	1,139,393

Source: Chrysler's Generator Biennial Hazardous Waste Report for EPA for 1985. Generator ID No. MID-005357975.

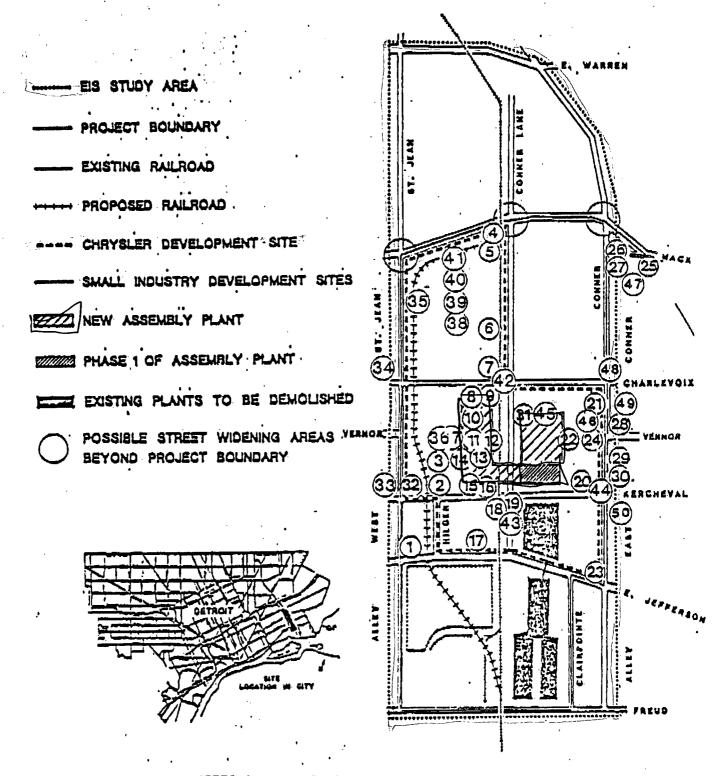
APPENDIX H

- H-1 INDUSTRIAL AND COMMERCIAL PARCELS
- H-2 HAZARDOUS WASTE INVESTIGATION AND MANAGEMENT PLAN
- H-3 HAZARDOUS SUBSTANCE LIST (HSL) AND CONTRACT REQUIRED DETECTION LIMITS (CRDL)

APPENDIX H-1

INDUSTRIAL COMMERCIAL PARCELS IN THE JEFFERSON/CONNER REVITALIZATION PROJECT AREA

These listed parcels, by virtue of present or past use, will be investigated for the presence of hazardous or toxic materials. This list has been prepared by consultants to the City's Community & Economic Development Department after field visits to the project area and review of Sanborn Atlas maps for the project area. The research will be repeated in more detail as a part of the project area Investigation (see, Appendix H-2), and may reduce or increase the number of parcels determined to require detailed site assessments or remedial action.



JEFFERSON-CONNER INDUSTRIAL REVITALIZATION

NEW CHRYSLER CITY PROJECT

(PARCELS THAT MAY BE SUBJECT TO TOXIC EVALUATION)

12/10/86

JEFFERSON-CONNER INDUSTRIAL REVITALIZATION NEW CHRYSLER CITY PROJECT (PARCELS THAT MAY BE SUBJECT TO TOXIC EVALUATION)

Map Key	Acquisition Parcel No.	Property	Address
1.	. 1	Sunoco Service Station	11301 E. Jefferson
2	647	Rieman Trucking	2112 Lycaste
3	688	Edison Substation	2251 Hart
4	741	Cornile Fuel & Supply	11801 Mack
5	742	Hart Rock Mfg.	3626 Hart
6	743	Don Cartage Co.	3040 Hart
7	744	Recoating Specialities	11811 Charlevoix
. 8	745	Wenn Enterprises	11800 Charlevoix 2662 Hart
9	746	Dura Cote Inc.	11825 Charlevoix
10	747	Durabuilt Weld Inc.	2660 Hart
11	748	Cadillac Glass	11801 E. Vernor 2570 Hart
12-13-14	749	King Scrap Metal	· 11874 E. Vernor
	750	(Conrail Owned Property)	11847-99 E. Vernor
•	752A	Hart Properties	2250 Hart
15	751 A	(Conrail Owned Property)	
16	752	Transamerica Auto Parts	11851 Kercheval
. 17	768	Comer Cleaners	11807 E. Jefferson
18	791	Edison Substation	12010 Kercheval
19-20-21	792	Vernor Inv.	12026 E. Vernor
	797	Grinder Clearing House	12345 Kercheval
٠.	799	Conner Clearing House	2679 Conner
22	793	City Metals Refining	12221 E. Vernor

23	796	Jefferson-Conner Shell Service Station	12441 E. Jefferson
24	798	Electroless Plating Co. Diamond Chemical	2531 Conner 2535 Conner
25	803	U.S. Fill Up Service Station	12530 Mack Avenue
26	804	Lees Auto Service	3940 Conner-
27	805	Davids Bump & Paint Shop	3926 Conner
28	814	American Heller Corp.	2586-2600 Conner
29	818	Atsalis Bros. Paint & Moint Co.	2160-2210 Conner
30	819	LubriGas Co.	2136 Conner
31	795	Conner Lane EDC Parcel	Former Chrysler Trim Plant
32	·	Gallagher Playfield	NE Corner/St. Jean and Kercheval
3.3	2.7	Auto Service	2115 St. Jean
34	65	Alston Transmission	2905 St. Jean
35	141	Precision Armatures	3400 St. Jean
36	689	Modern Mirror & Glass	2505 Hart
37	690	Modern Mirror & Glass	2525 Hart
38	737	vacant land	3585-93 Hart .
39	738	Universal Bindery	3615 Hart
40	739	vacant land	3621 Hart
41	740	· Pro Tire Center	3633-55 Hart
42	746	Duracoxe	11830-58 Charlevoix
4 3	790	City of Detroit vacant	land 12028 Kercheval
4 4	794	Vernor Investment Co.	12297 E. Vernor

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*					
45	795	EDC Property	12301 East Vernor		
4 6	798A	Auto Parts Store	2619-39 Conner		
47	806	Auto Wash (closed)	12501 Signet		
48	0.18	Conner Tool and. Manufacturing	3400 Conner		
4.9	813	AA Collision Body Shop	12504 Charlevoix		
50	820	City of Detroit vacant land.	12503 Charlevoix		

APPENDIX H-2

HAZARDOUS WASTE INVESTIGATION AND MANAGEMENT PLAN

This plan incorporates much of the site investigation and management p process; from Chapter V of the DEIS. However, the site investigation p set forth in the DEIS has been modified in response to comments and conce expressed during the comment period. In addition, although the Cent Industrial Park Project process was used as a basis for the process describ below, it was not entirely appropriate and is not included herein.

PROJECT AREA INVESTIGATION

A. INTRODUCTION

The investigation will be conducted in phases. This approach will permit reanalysis of areas identified in the first phase, if necessary, and will permit targeting of remediation in conformance with demolition and construction schedules.

The demolition of the existing Jefferson Avenue Assembly Plant is not scheduled until the new assembly plant commences operation. Demolition of the existing plant is projected to occur sometime in 1991 or thereafter. Accordingly, assessment of the existing assembly plant properties will not occur until prior to demolition for those properties, site assessments will be performed by Chrysler in accordance with then applicable regulations.

B. PHASE I - INITIAL SITE SURVEY

Phase I is primarily a screening phase. During this phase, parcels likely to require detailed investigation will be identified and present RCRA, enforcement, and accumulation status will be determined. In addition, subsurface investigations of high probability parcels will be performed.

1. Records Search

Properties will be screened for the following kinds of documents:

- Historic parcel use records;
- Early land use maps and aerial photographs;
- RCRA permits, notifications or enforcement action for non-Chrysler parcels;
- TSCA PCB inventories of these sites or enforcement actions;
- Surface water or groundwater spills or enforcement actions reported in the area;
- Complaints filed for activities on these sites and the nature of these complaints;
- Emergency site inspections, remedial actions or enforcement actions initiated as a result of industrial or other activities on these sites;
- Based on past experience and the history of these sites, storage problems which will be carefully investigated during the site inspection and assessment process.

To facilitate the Michigan DNR District Office screening prwhatever history of past usage of these sites may be available als be given to the Michigan DNR as an aid to discovering the informavailable.

Based upon this screening process, a final listing of sit receive inspections and further assessments will be developed.

Based on currently available information, none of these induparcels have required any emergency response entry and remedial by the Michigan DNR.

No site inspections have been made of the industrial sites acquired, because entry will likely first become possible during appraisal period afforded by Act 87 condemnation procedures. How inspections are scheduled to commence during December, 1986.

2. Parcel Inspections.

Parcels within the construction "footprint" and other paidentified through record searches and other available informatic possible hazardous materials users or hazardous waste generators, or present, will be subject to on-site inspection (environmental audit)

The purpose of these on-site environmental audits will be determine the requirements for any further site investigations. If upon the current and past usage of the site, the following kinds of assessment decisions will be made for each inspected site:

- What kinds of equipment on site?
- Site chemical use history?
- Existence of PCB contaminated hydraulic fluids, transfor and capacitors.
- Any used oils to be sampled and disposed of?
- Any sludges or drums stored on site? Any knowledge contents?
- What do the junk yards contain?
- Any underground tanks suspected?
- What kinds of salvage operations exist on site?
- What kinds of industrial facility and equipment?
- What kind of detailed site assessment should be maddetermine cleanup cost?

Is there evidence of recent or historic chemical waste disposal, leaks or spills on the parcel (e.g., discoloration, dead vegetation, "pits" or "sinks," employee information, etc.)?

From these inspections, a list of parcels to be further investigated will be generated. A specific Site Investigation Plan, including testing protocols and parameters will be prepared for each site to be further investigated. However, a generalized Site Investigation Plan is presented below.

3. General Site Investigation Plan

It is important to accomplish certain goals during this investigation. First, it is essential to determine the subsursface conditions in the area of the proposed new Phosphate Uniprime Facility building. Second, existing storage tank placements and other hazardous material containers must be investigated for spills and leaks, as must substations, and the contents of hazardous material/hazardous waste containers, must be verified. Third, asbestos must be characterized as to use, type and volume. Fourth, present and past PCB use and holding or accumulation areas must be identified and tested.

It is not anticipated that all of the site inspections will result in the necessity for a specific site assessment plan being prepared for each site visited. The history of each site and the magnitude of on-site equipment and "junk" will also dictate the comprehensiveness, scope, and magnitude of each site assessment plan prepared. This project area is to be investigated for the purpose of mitigating the impact of hazardous materials exposed during demolition, site preparation and construction phases of the project. Consequently, this investigation and any remedial action plan will be directed to that end. Specific site assessment plans will, therefore, be tailored to the uniqueness of each site inspected and which, as a result of inspection, requires further evaluation.

Each site may require one or more of the following measures:

- Sampling of hazardous material containers;
- Sampling of asbestos;
- Sampling of soil and analysis for specific suspected contaminants in areas identified as likely to be contaminated:
- Sampling of groundwater and analysis for specific suspected contaminants in areas identified as likely to have been contaminated.

4. Geophysical Investigation Methods.

Specific site assessments may require subsurface investigations which may include:

- Some form of geophysical survey to determine the existence of buried drums and tanks. Bore holes should not be drilled in a location without making certain the area to be drilled is free of buried drums or tanks.
- Borings will be advanced, with continuous sampling and logging. Borings will be advanced into original soil material. Because of limitations imposed by fill materials, borings will be advanced by auger or by backhoe. Samples for analysis will be retained from the first twelve inches of material, the third twelve inches and the first twelve inches of original soil.
- Temporary monitoring wells may be set and developed in some borings. A 24-hour water level will be established. Wells will be purged three to five volumes, if possible, and samples will be taken. If more than one subsurface water level appears to be present, separate wells may be set and developed. Wells will remain in place until analysis results are available.
- Soils will be described and characterized as to permeability, grain size and water content.

5. Characterization Of Waste.

Specific site assessments may require waste characterization by one or more of the following methods:

- Stored or otherwise contained hazardous materials for which characterization is required, will be sampled and analyzed in accordance with RCRA procedures. Protocols will conform to the CLP and to 40 CFR Part 261. Each sample will be analyzed initially for only those materials for which there is reason to suspect a presence.
- For chemical analysis of soils, samples will be split. Wherever possible, samples from each level for a specific site will be composited for this first phase screening. Samples or composites will be analyzed initially for only those materials for which there is reason to suspect a presence. Splits will be retained for later reanalysis, as necessary.
- Chemical analysis of water samples will be performed in the same manner as soil. Splits will not be taken if a well remains open.
- If groundwater is not available from a boring or pit, a mid-level soil sample will be analyzed instead.
- Minimum detection limits (MDLs) will be the CLP CRDLs for medium water and soil. (Appendix H-3) These MDLs are suggested because the project area is and will remain an industrial area. Much of the project area will ultimately be

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covered by structures or paving and will be isolated. Further, present utilities within the project area (e.g., storm and sanitary sewers) will be removed.

- Sites such as this often produce samples with extreme interference in GC/MS analysis. Some soil samples may produce MDLs up to 50-100 ppm in certain categories. However, adjacent samples will not necessarily be equally affected. Reanalysis may be postponed until excavation is begun, since the mass of excavated material is at issue, and the composite contamination level of disposed material will determine the level of cleanup.
- The history of uses on some of the parcels in the project area indicate that likely contaminants will be limited to:
 - * Chlorinated solvents;

VOCS

- Volatile solvents (e.g., acetone, toluene, xylene, benzene, etc.);
- * Glycols and related compounds;
- * Plasticizers:
- * Petroleum products; Ppn.
- * Hydrocarbons;
- * PCBs (if in historic or present transformers/substation area);
- * Heavy metals;
- * Asbestos.

This list may be expanded as a result of site investigations.

PHASE II - Survey Of Remaining Project Area

1. Remaining Non-Residential Parcels.

Those parcels not investigated during Phase I will be investigated at this time in the same fashion. However, for the most part, these are small, single use parcels. Therefore, these investigations will be more readily "targetable" to specific locations and chemicals.

2. Hydrogeological Investigation.

Based upon information obtained during Phase I, a determination will be made as to the need for further hydrogeologic investigation. Given the present understanding of the area lithology, if such an

investigation is required, it would be limited primarily to the top few feet of material. Boreholes and monitoring wells would be advanced only into the original soils deeply enough to establish contact. Monitor wells would be screened in waters found in the fill, as described in Phase I. If further hydrogeological investigation is warranted, it would proceed as described below:

- A series of borings will be made throughout the project area extending three to five feet into lacustrine clays. The borings will be continuously logged with samples taken as appropriate to characterize soils and analyze permeability as well as other characteristics as may be required.
- A maximum of 20 borings will be made for this investigation in addition to the borings made previously. Given the paucity of soils and geologic information, the borings will be advanced in a pattern particularly selected to provide the information needed to establish subsurface water gradients as well as the present surface of the original soil (Exhibit V-6). This information is necessary to ensure that if contaminants are found, migration via subsurface water can be interdicted.
- Three borings to bedrock have been identified in or near the project area. Therefore, additional deep borings will not be necessary.

3. Groundwater Sampling And Analysis.

Any wells installed for sampling purposes under the hydrogelogical investigation will be sampled as follows:

- Once 24-hour water levels have been established, all wells will be purged three to five volumes, if possible, and sampled.
- Analyses will be performed to accommplish two purposes. First, because it appears that subsurface water appears only in the fill, it may be necessary to determine whether waters found are connected and moving in the fill or ponded. Therefore, an analysis of cations and anions for piper or similar modeling will be performed. Second, it may be necessary to determine whether pollutants, if found during Phase 1, have migrated. Samples will be analyzed for any contaminants identified in upgradient parcels.
- It has been recommended by Region V, USEPA, that all samples be analyzed for the entire CLP HSL. Initial investigations will focus on contaminants expected to be present. However, if investigations indicate a significant probability of widespread and/or broadly varied contamination, monitor wells will be selected for HSL analysis. The selected well list will be discussed with MDNR prior to sampling.

4. Storm Sewer Sampling.

Phase II will also involve storm sewer sampling as follows:

The Conner Barrel and selected storm sewers which run through the project area will be sampled upstream and downstream of the project area. Only sewers containing water during non-rainfall periods will be sampled because groundwater transport via storm sewers is the matter of concern. Samples will be analyzed for contaminants which are found in the greatest concentration on site. By comparing upstream and downstream concentrations, with connection; for differences in volume, it will be possible to determine whether the storm sewers are transporting groundwater contaminants.

PHASE III - Remediation Plan.

1. Data Evaluation.

- Data Evaluation will occur throughout Phases I and II. However, once these phases are complete, all data will be evaluated to provide the basis for an overall remediation plan.
- Data evaluation results will be discussed with MDNR, as they are developed during Phases I and II as the final evaluation is completed.

2. <u>Development Of Remedial Actions For Hazardous Waste Removal.</u>

- Whenever hazardous materials are found which will be disturbed by project activities, or which may present a threat to human health or the environment, whether or not disturbed by project activities, it will be necessary to prepare plans for removal, accumulation, security, transportation and disposal. These plans may include asbestos removal from pipes, walls, etc.; PCB removal from transformer oils on-site; drummed material removal; removal of hazardous materials from tanks, followed by tank cleaning and disposal, etc.
- Remedial action plans for hazardous wastes found on some parcels within the project area may require preparation and approval of RCRA Closure Plans. In any case, MDNR will be apprised of and allowed to comment on all remediation plans.

3. Development Of Remedial Action Plans For Contaminated Areas.

- If contamination is found at levels which require cleanup, a remedial action plan will be prepared for the involved parcel. Plans will include removal, handling, transportation and disposal. MDNR will be involved during the planning process.

4. Evaluation And Selection Of Actions.

- Remedial actions for cleanup are dependent upon action levels to be established for each affected site. Given the present and future uses of the project area, cleanup action levels may be expected to vary from parcel to parcel.
- It will be necessary to obtain MDNR concurrence for action levels. Therefore, as information becomes available on degree and extent of contamination, MDNR will be consulted.

5. Implementation Of Actions.

- The City's Construction Manager will implement approved plans through qualified subcontractors. All subcontractors employed for implementation will be licensed and/or permitted as required by applicable laws and regulations.

PHASE IV - Demolition And Excavation.

If additional areas of suspected contamination are found, additional sampling and analysis will be performed as in Phase I. Work in such an area will be suspended until results of sampling are known, and, if necessary, a remedial action plan is prepared for any area found to be contaminated.

- Following demolition and removal of the debris, where needed soil cores will be taken in those areas which will be excavated, in order to determine the extent and depth of contamination. Sample soil cores will be analyzed for hazardous or toxic substances, as appropriate.
- Appropriate plans will be devised and implemented for such subsurface areas of contamination as are documented above so that stormwater runoff does not contact or remove such material.
- Excavation and demolition will be permitted to begin in all areas except those found to be suspected of contamination.
 Following the investigations described immediately above, excavation can proceed whereever called for.

Special Concerns.

1. Buried Wastes.

 To aid in the discovery of buried containers, some form of geophysical survey methods are to be used prior to other subsurface investigations. - If such materials are found, either during the above investigations or as a result of subsurface investigations or excavations, MDNR will be contacted and an appropriate investigation and remediation plan will be developed.

2. Safety And QA/QC.

- The investigation process for the project area will include preparation of a Site Operating Plan, a Health And Safety Plan and a Quality Assurance/Quality Control Plan, prior to beginning field work.

3. Notifications

- If the project results in the generation of hazardous wastes, notifications may be required. As described above, MDNR will be kept apprised of progress and notifications will be made as required by law.

APPENDIX H3

HAZARDOUS SUBSTANCE LIST (HSL) AND CONTRACT REQUIRED DETECTION LIMITS (CRDL)